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POLITICS, ECONOMICS, AND EDUCATIONAL OUTCOMES IN THE STATES.
FINAL REPORT.

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THE EFFECTS OF POLITICAL, ECONOMIC, AND SOCIOECONOMIC VARIABLES ON EDUCATIONAL POLICIES OF THE 50 STATES WERE EXAMINED IN THIS DOCUMENT. UTILIZING A SYSTEMS ANALYSIS FRAMEWORK, THE AUTHOR EXPLORED NUMEROUS SYSTEMIC OUTPUTS SUCH AS PER PUPIL EXPENDITURES, PER CAPITA EDUCATIONAL EXPENDITURES, AND AVERAGE TEACHER SALARY. THE PRINCIPAL FINDING OF THE STUDY WAS THAT ECONOMIC DEVELOPMENT VARIABLES ARE MORE INFLUENTIAL THAN POLITICAL SYSTEM CHARACTERISTICS IN SHAPING EDUCATIONAL POLICY IN THE STATES. (DG)

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OUTCOMES IN THE STATES

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Project No. 6-8382

Thomas R. Dye

March 1967

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I. INTRODUCTION: ASSESSING POLITICAL INFLUENCE IN EDUCATION

One of the central tasks of political science is the identification of the forces shaping public policy, and this includes educational policy. While the structure and functioning of political systems have always been a concern of political science, the content of public policy is also a variable that political scientists endeavor to explain. The purpose of the research reported below was to explore some of the determinants to the question of whether or not political characteristics of the states independently influence educational outcomes. Does partisanship, party competition, voter participation, or malapportionment have any significant impact on state policies in education? Or are educational policies primarily a function of economic conditions in the states?

Political scientists and educators apparently share a common interest in the identification of the forces shaping policy on public spending for education in the 50 states.¹ Sherman Shapiro correlated educational expenditures with income, industrialization, urbanization, and eight other socioeconomic variables among the states for 1920, 1930, 1940, and 1950.² Jerry Miner correlated state per pupil and per capita educational expenditures in 1960 with 22 social and economic characteristics of the states.³ Edward F. Renshaw examined the effect of increases in state aid on per pupil expenditures in the states.⁴ Research publications of the National Education Association have also stressed the relationships between socioeconomic variables and educational finance.⁵ Thus, educators, and even some economists, have been concerned with the socioeconomic determinants of educational spending in the states.

The most obvious void in the research literature on state educational policies is in systematic efforts to understand the impact of "political" variables on educational outcomes. While both educators and political scientists have been increasingly interested in the political environment of educational decision-making at the community level, research on state politics and education is comparatively rare.⁶ Yet it seems fair to say that educational policy is being determined increasingly at the state level and that research into the relationship between state politics and public education is particularly appropriate.⁷ Recently, political scientists Nicholas A. Masters, Robert H. Salisbury, and Thomas H. Eliot tried to relate certain characteristics of state political systems to educational policy-making, but their analysis was limited to only three states.⁸

We are still in need of systematic studies of the impact of political variables on educational outcomes in the 50 states. What is the effect of Democratic or Republican dominance on state educational policy outcomes? Does it make any difference in educational policy whether a state has a competitive two-party system or a one-party style of politics? Does the level of voter participation in the states affect educational outcomes? What is the effect of malapportionment on educational policy, and is court-ordered reapportionment likely to bring about significant changes in educational outcomes?

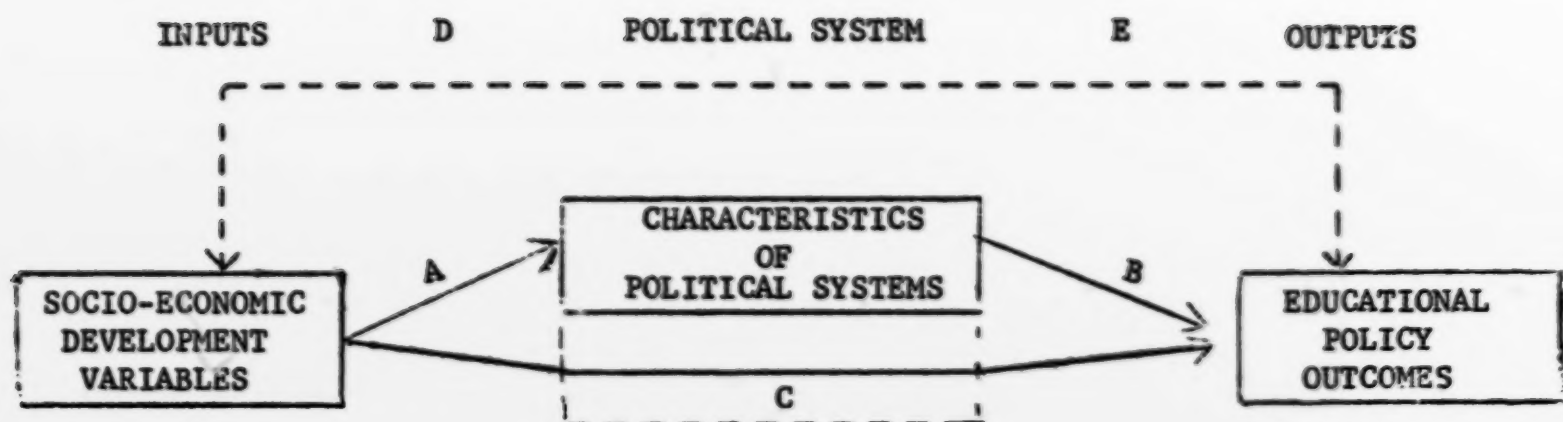
A Systems Model for Analyzing Education Policy

How can we achieve a better perspective on the relationships between educational policy, political activity, and environmental variables? It is our contention that the conceptual framework developed by political scientist David Easton in A Systems Analysis of Political Life, and in other publications, is a useful analytic tool in examining the determinants of policy outcomes in public education in American states.⁹ Moreover, it is our contention that the insights devised from a systems analysis approach to educational outcomes will challenge many of the assumptions in political science literature about the effect of political variables on policy outcomes.

Let us use the Easton model to conceptualize the determinants of public educational policy in the 50 states. We shall conceive of educational outcomes as the product of "inputs" brought to bear upon a "system" causing it to produce particular "outputs." The diagram below assumes the socioeconomic character of a state, that is, any condition defined as external to the boundaries of its political system, determine the nature of its political system. The political system is that group of inter-related structures and processes that allocate authoritatively values within a state. Policy outcomes are viewed as the value commitments of the political system and as such they are the chief output of that system.

FIGURE 1

MODEL FOR THE ANALYSIS OF
EDUCATIONAL POLICY OUTCOMES



selected variables

urbanization
industrialization
income
adult education

selected variables

constitutional framework
partisanship
party competition
political participation
apportionment system

selected variables

educational expenditures
educational effort
division of state-
local responsibility
"quality" in education
teachers and class-
rooms

Within this conceptual framework, the central question presented is whether or not differences in educational outcomes are independently related to characteristics of political systems (see Fig. 1). Do political system characteristics mediate between socioeconomic inputs and educational outcomes (as suggested by linkages A and B), or are policy outcomes determined by socio-economic variables without regard to system characteristics (as suggested by linkage C)? To state the problem in another fashion: assuming that socioeconomic variables influence both system characteristics and educational outcomes, can system characteristics be shown to influence educational outcomes once the effects of socioeconomic variables are controlled?

Definition of Terms

Let us turn first to the problem of selecting input variables. Students of politics from Aristotle to the present have recognized that society's economic development helps to shape its political system and determine its public policy. Economic development is defined here to include urbanization, industrialization, income, and the level of adult education.¹⁰

It is not difficult to justify the selection of economic development as the principal input variable in a model designed to explain educational policy outcomes. The literature on economic development is replete with theoretical postulates and empirical evidence of the linkage between a society's economy and its educational requirements. And the National Educational Association has pressed this point with legislators:

There is an intimate relationship between schooling and the economic health of a nation and of its citizens. Prosperity demands productivity and productivity demands trained talent. Education develops the intellectual and manual skills which underlie the productive abilities of individuals and nations today. Nations with the highest general level of education are those with the highest economic development. Schools, more than natural resources, are the basis of prosperity.¹¹

What system characteristics should be incorporated into our model? Just as it was necessary to limit the number of environmental variables that could be included, so also it is necessary to limit the number of system characteristics to be incorporated into it. Four sets of system variables were chosen for inclusion in our model of policy outcomes, two reflecting characteristics of the party system and two reflecting characteristics of the electoral system. Party systems are represented in our model by

several measures of the level of interparty competition in state politics, and by several measures of the division of Democratic and Republican control of state government.¹² Electoral systems are represented in our model by several measures of the level of voter participation or turnout, and by several measures of the degree of malapportionment in state legislative districts. All four of these system characteristics--the division of the two-party control, the level of interparty competition, the level of voter participation, and the degree of malapportionment--are hypothesized in political science literature as influential in shaping policy outcomes in the American states. In this paper we shall explore the extent to which these system characteristics influence education outcomes.

Educational policy outcomes have been defined to include selected measures of educational expenditures, state efforts in education, organizing, and financing public schools, the status of teachers, and the numbers of dropouts and selective service mental failures.¹³ These outcomes measures are described below together with the reasons for their selection.

II. METHOD: MEASURING EFFECTS OF POLITICAL AND ECONOMIC VARIABLES

The method chosen to assess the independent effect of political and socioeconomic variables on state education outcomes was that of simple, partial, and multiple correlation analysis. First, simple correlation coefficients (product moment) were computed for all possible relationships among indexes of economic development, measures of political variables, and measures of educational outcomes. These simple coefficients show the extent to which differences in economic development and political systems are associated with differences in policy outcomes, but they do not establish whether it is economic development or political variables that are primarily responsible for differences in these outcomes. For example, if it is shown that, in general, wealthy states have more party competition than poor states, if it is shown that, in general, wealthy states have more party competition than poor states, it may be that differences in the educational policies of competitive and noncompetitive states are really a product of the fact that the former are wealthy and the latter are poor. If this were the case, policy differences between the states might be attributable to wealth rather than to party competition. In order to isolate the effect of party competition on educational outcomes from the effect of economic development variables, it is necessary to control for these variables. This required that partial correlation coefficients be computed to show the required that partial correlation coefficients disappear when these socioeconomic variables are controlled, then we may conclude that there is no independent

relationship between party competition and policy outcomes. On the other hand, if partial correlation coefficients between party competition and policy outcomes remain significant, even after the effects of socioeconomic variables are controlled, then we may conclude that party competition does have an effect on public policy.

The same set of operations was employed to test the independent effect of partisanship, voter participation, and malapportionment.

III. RESULTS: ECONOMIC DEVELOPMENT AND THE CHARACTER OF STATE POLITICS

Before turning directly to the analysis of educational outcomes, it is important to understand the linkages between economic development and political system characteristics. Our model suggests that educational outcomes may be a product of both economic-development levels and political-system characteristics, and that the task of policy research is to sort out the effects of system characteristics on educational outcomes from the effects of economic development.

Neither urbanization nor industrialization correlates significantly with Democratic or Republican party success. However, Democratic and Republican states differ significantly with respect to income and education. States with lower income and educational levels tend to be Democratic states, while wealthier states with better educated adult populations come and education are important to keep in mind when exploring the effect of partisanship on educational policy. Educational differences between Republican and Democratic states may not really be a product of party affiliation so much as a product of their differing income and education levels. To identify the independent effect of party affiliation on educational policy, it will be necessary to control for the effects of income and education.

Party competition is even more closely associated with income and education than partisanship. Parties are more evenly balanced in wealthier states with better educated adult populations; there is less competition in the poorer states. There is also a slight relationship between party competition and urbanization. Participation is also noticeably higher in states with higher income and education levels.

There is also some slight relationship between economic development and the under-representation of urban areas in state legislatures. Industrial high-income states are less likely to discriminate against their urban areas than low-income agricultural states.

ECONOMIC INPUTS AND EDUCATIONAL OUTPUTS

The Cost of Teaching Johnny to Read

Any analysis of public educational policies must begin by explaining educational expenditures. Table 1 shows that economic development is an important determinant of a state's willingness and ability to provide educational services. All four measures of economic development correlate significantly with variations among the states in per pupil expenditures for public education. However, it was the income measure that explained more about per pupil expenditures than any other variables. Almost 70 per cent of the total variation among the fifty states in per pupil expenditures can be explained with reference to median family income. The results are the same even if the southern states are excluded from analysis. Clearly, wealth is the principal determinant of the amount of money a state spends on the education of each child.

State Efforts in Education

Per pupil expenditures measure both the willingness and ability of a state to spend money for education. The next problem is to separate "willingness to spend" from "ability to spend" in order to determine roughly the sacrifice a state is making for education. The desire for education can be expressed in terms of school expenditures relative to some measure of a state's ability to spend money. In this way, states that spend more or less relative to their ability can be identified. The most appropriate measure of ability to pay for education is probably the total personal income of the state. Therefore, the measure "total public school expenditures as a percentage of total personal income" really holds constant for ability to spend and more directly measures a state's willingness to sacrifice personal income for public education.

Table 1 indicates that increased industrialization, urbanization, and income actually result in a reduction of education effort. This is in striking contrast to the effect of these variables on per pupil expenditures: while per pupil expenditures rise with increasing income levels, school expenditures as a percentage of personal income declines. This means that the poorer, less-industrialized, rural states are actually putting forth a greater effort in the educational field relative to their resources than the wealthy, urban, industrial states. But so great are the inequalities among the states in wealth, that the poorer states, despite their greater effort, are unable to approach the wealthier states in per pupil expenditures. Even Mississippi's \$229 per pupil expenditure (5.8

TABLE 1

**Relationship between Economic Development
and Selected Educational Policy Outcomes in the 50 States**

	Economic Development			
	Urban- zation	Indus- trialization	Income	Education
Per Pupil Expenditures	.51*	.36*	.83*	.59*
Expenditure Relative to Income	-.31*	-.44*	-.30	-.05*
Expenditure Relative to Total Expenditure	-.10	-.03	.01	.17
Per Capita Expenditures	.20	-.04	.61*	.75*
Size of School District	.06	.26	-.18	-.37
State Participation	-.10	.18	-.30*	-.35*
Federal Participation	-.36*	-.08	-.32*	-.27
Poverty Impacted School Aid	-.58*	-.43*	-.85*	-.67*
Average Teacher Salary	.69*	.64*	.88*	.57*
Elementary Teachers with B.A.	.42*	.60*	.11	-.04*
Secondary Teachers with M.A.	.54*	.42*	.55*	.42*
Male Teachers	.48*	.26	.63*	.63*
Pupil-Teacher Ratio	-.13	-.19	-.43*	-.50*
Drop-Out Rate	-.40*	.09	-.54*	-.60*
Mental Failures	-.05	.13	-.46*	-.70*

NOTE: Figures are simple correlation coefficients for 50 states;
an asterisk indicates a statistically significant relationship.

per cent of that state's personal income) represented a greater effort than New York's expenditure of \$628 per pupil (only 3.7 per cent of that state's personal income spent on education). In short, wealthier states can provide better educations for their children with less of an economic sacrifice than that required of poorer states to provide an inferior education for their children.

Educational expenditures as a percentage of total state and local government expenditures are a measure of public effort in education relative to other public efforts. In general, the coefficients in Table 1 indicate the economic development does not affect the relative proportion of public funds devoted to education. Wealthy, urban, industrial states do not consistently spend more for education than for other public functions. These states simply spend more for all public functions without particularly favoring education. The variation among the states in the proportion of public funds devoted to education cannot be traced to any of the indexes of economic development.

One final expenditure variable deserves attention: per capita educational expenditures. Per pupil expenditures are probably a better measurement of educational service per unit of "need" than per capita expenditures. However, it might be argued that not only pupils but every member of society benefits from public education, and therefore it is appropriate to measure education service on a per capita basis. Per capita education expenditures are closely related to income and to education levels of adults. It is interesting that education levels of adults appear to be even more influential than income in determining per capita school expenditures.

Centralization in State Education

Major devices for ensuring the implementation of state educational policies are state grants to local school districts. Since these grants are administered through state departments of education, state school officials are given an effective tool for implementing state policies, namely, withholding or threatening to withhold state funds from school districts that do not conform to state standards. Increasing state participation in school finance, then, is an indication of increasing centralization of education in the states. One of the most dramatic reorganization and centralization movements in American government in this century has been the successful drive to reduce the number of local school districts in the United States through consolidation. The extent of state participation in financing public schools and the success of the school-district consolidation movement are both important indexes of educational centralization in the states.

It is in the poorer states and the states where adults have lower education levels that the state governments have played a greater role in the financing of public schools and that the school consolidation movement has made the greatest progress. The negative coefficients indicate that state participation in school finance decreases among the more wealthy states and the states with educated adult populations. Apparently, the lack of economic resources is a stimulus for state participation in school finance and school district consolidation. Affluence, on the other hand, enables smaller local school districts to function more effectively, reduces the need for state aid, and delays the movement toward school consolidation.

The Federal Role

Still another question involving the organization of public education in the nation is the role of the federal government. While large-scale plans for federal aid to education consistently floundered in the Congress prior to 1965, the federal government did contribute to public education through a number of specialized programs.

The total financial contribution of the federal government to public elementary and secondary education through these programs was quite small. Federal funds amounted to only about 4 per cent of the total public school revenues in 1962. However, there is considerable variation among the states in the extent of their reliance on federal funds for public schools. Federal participation in school finance does have a slight equalizing effect among the states. Table 1 shows that the federal government tends to pay a greater proportion of the cost of public education in the less wealthy, rural states. Thus, federal aid tends to equalize educational opportunity throughout the 50 states.

With the passage of the Elementary and Secondary Education Act of 1965, the role of the federal government in financing education will be greatly expanded. This act, among other things, pledges important federal aid to poverty-impacted schools, those schools that enroll children from low income families. It can be expected that the equalizing effect of federal aid will be more pronounced in the years ahead as the federal contributions to educational expenditures increase.

What is the effect of increased state and federal participation on public school systems? Since it is in the poorer states that state government plays the greatest fiscal role, and since these states also have the lowest per pupil expenditures, simple coefficients seem to say that state participation brings about lower per pupil expenditures. The simple coefficient for the relationship between state participation in school finance and per pupil expenditures among all fifty states is $-.26$. However, once the effects of economic development are controlled, this coefficient disappears; the partial coefficient for the relationship between state participation and per pupil expenditures, while controlling for the effect of economic development, is $-.03$. Clearly then, it is a lack of economic resources, and not state participation, that brings about lower per pupil expenditures in the less wealthy states.

It is noteworthy, however, that the partial coefficients do not permit us to conclude that state and federal participation leads to increases in per pupil expenditures. The partial coefficients are too low to assert any positive relationship between state or federal participation and per pupil expenditures. This tends to confirm the findings of Edward F. Renshaw about the effect of state participation on school expenditures.¹⁴ Renshaw found that increasing ratios of state to other aid does not necessarily bring about increased expenditures per pupil. State aid is more a substitute for local support than it is a stimulant to educational expenditures.

States and School Teachers

Let us assume that the proportion of elementary teachers with a bachelor's degree and the proportion of secondary-school teachers with a master's degree are rough measures of the adequacy of teacher preparation in a state school system.

It is interesting to observe that the states that apparently place little emphasis on elementary-teacher preparation are not necessarily the poorer states but the more rural and agricultural states. The coefficients in Table 1 for elementary-teacher preparation show that state income levels were not related to four-year college preparation, but that urbanization and industrialization were related to this measure. Apparently, years ago, midwestern farm communities did not feel that their elementary teachers needed to be college graduates, and many noncollege teachers remain on their staffs.

The rural states also score low in the preparation of their secondary teachers. However, in the case of secondary teachers, income levels play an important role in the willingness and ability of a state school system to obtain highly trained high school teachers. All four measures of economic development were related to the preparation of secondary teachers.

Economic development is an important determinant in teachers' salaries. Table 1 shows that all four measures of economic development were closely related to teachers' salaries in the 50 states in 1962. It was wealth, however, that was the single most important determinant of teachers' salaries. Median family income explained almost 80 per cent of the variation among the states in average teachers' salaries.

Wealthy, urban states with well-educated adult populations also attract more men into their public educational systems than states lacking in these attributes.

One final measure in instructional quality available for all 50 states is the pupil-teacher ratio, or the number of pupils enrolled per member of instructional staff. Two indexes of economic development, family income and adult educational level, correlated significantly with teacher-pupil ratios in the 50 states.

Drop-Outs and Mental Failures

Given conflicts over the objectives of public education, it is difficult to make any overall evaluation of educational output. Is the goal of public education college preparation, vocational skill, emotional happiness, psychological adjustment, academic excellence, the reduction of automobile accidents, the inculcation of spiritual values, the cultivation of patriotism, the production of engineers and scientists, the training of competent homemakers, or winning the Olympics? How can we tell whether the failure to achieve any one of these objectives is a

product of our educational policies or an outgrowth of other national problems?

Two measures seemingly reflective of public education that are available on a state-by-state basis are the percentage of high-school students who drop out of school before graduation and the percentage of selective service registrants who fail the mental examination prior to induction.

Economic development is directly related to drop-out rates and mental failures. Thus, the simple correlations point to a familiar syndrome: wealthy states with well-educated adult populations are the same states that spend more per pupil on their public schools, pay higher teachers' salaries, attract more male teachers, and have better teacher-pupil ratios; and these same states tend to have fewer high school drop-out and selective service mental failures. In contrast, the less wealthy states with poorly educated adult populations spend less per pupil on their public schools, pay lower teachers' salaries, attract fewer male teachers, and have poor teacher-pupil ratios; and these same states have more drop-outs and mental failures.

One final note about the impact of economic development: partial coefficients (not shown) indicated that controlling for political variables did not affect the relationships between socioeconomic variables and policy outcomes. This is evidence that these relationships do not depend upon political conditions in the states.

IV. DISCUSSION: POLITICAL VARIABLES AND EDUCATIONAL OUTCOMES

Partisanship

Thus far, attention has been focused upon the relationships between socio-economic inputs and education policy outcomes. Now we turn to the problem of assessing the influence of political system characteristics on educational policy.

First of all, let us examine the effect of Democratic and Republican party control of state government in education policy. Are the educational policies of states under Democratic and Republican control any different?

Table 2 presents both simple and partial correlation coefficients for the relationships between educational policy outcomes and Democratic dominance in state legislatures and gubernatorial elections. The partial coefficients control for all four measures of economic development--urbanization, industrialization, income, and education.

As the coefficients indicate, there are many significant associations between partisanship and public policy outcomes. The simple coefficients show that states experiencing Democratic party control

TABLE 2
Relationship between Political
Variables and State Educational Outcomes

	Democratic Success		Party Competition		Voter Participation		Legislative Malapportionment	
	Simple	Partial	Simple	Partial	Simple	Partial	Simple	Partial
Per Pupil Expenditures	-.47*	-.06	.51	.08	.49*	.18	.09	.15
Expenditure Relative to Income	.15	.33	.07	-.14	-.19	-.23	-.10	-.06
Expenditure Relative to Total Expenditure	.05	.17	-.15	-.15	.13	.12	.04	-.09
Per Capita Expenditure	-.39*	.30	.43*	.07	.38*	-.08	-.06	-.25
Size of School District	.64*	.49*	-.51*	-.34	-.45	-.29	-.13	-.15
State Participation	.68*	.61*	-.50*	-.31	-.46	-.31	-.23	-.28
Federal Participation	.27	.60*	-.24	-.30	-.26	-.29	-.07	-.18*
Average Teacher's Salary	-.23	.27	.36*	.11	.35*	-.16	-.01	-.28
Elementary Teachers with M.A.	.62*	.67*	-.38*	-.34	-.37*	-.37	-.12	-.24
Secondary Teachers with M.A.	-.15	.06	.16	.16	.31*	.11	.10	-.04
Male Teachers	-.49*	-.25	.50*	.14	.49*	.22	.01	-.10
Pupil-Teacher Ratio	.72*	.50*	-.55*	-.21	-.63*	-.30	-.15*	-.21
Drop-Out Rate	-.69*	.55*	-.74*	-.53*	-.66*	-.53*	.15	.29
Mental Failures	.71*	.42*	-.64*	-.37*	-.73*	-.63*	-.16	-.14

NOTE: Figures are simple and partial correlation coefficients for 50 states; partial coefficients control for the effect of urbanization, industrialization, income, and education; and asterisk indicates a statistically significant relationship.

between 1954 and 1964 were the same states that had lower per pupil expenditures and lower per capita educational expenditures. While these Democratic states had more elementary teachers with B.A. degrees, on several other measures of quality instruction they rank low. They had fewer male teachers, higher pupil-teacher ratios, and high drop-out rates and mental failures. There was also some slight association between Democratic control and lower teachers' salaries. Finally, Democratic states tended to have larger school districts and to receive greater shares of educational revenues from state rather than local sources. Republican party control of state government, on the other hand, was associated with just the opposite of all these educational outcomes.

When economic development is controlled, however, some of the association between partisanship and public policy disappears. This means that part of the association between Democratic party control and educational outcomes was merely a product of the intervening effect of economic development. There seems to be no independent relationship between partisanship and per pupil expenditures, educational expenditures relative to income, per capita educational expenditures, average teachers' salaries, the preparation of secondary teachers, or the proportion of male teachers. These important educational outcomes are not affected by the party dominating state government.

On the other hand, even after controlling for economic development, significant associations continued to exist between partisanship and elementary-teacher preparation, pupil-teacher ratios, drop-out rates, mental failures, the size of school districts, and the extent of state and federal participation in school finance. The coefficients for these relationships were noticeably reduced when economic development was controlled, but we cannot reject the idea that there is some linkage between partisanship and these outcomes, a linkage that is not an artifact of economic development.

In spite of these controlled relationships, we are reluctant to infer that a direct causal relationship exists between Democratic politics and higher drop-out rates and mental failures. It seems unlikely that Democratic politics "brings about" drop-outs or mental failures, or even vice versa, especially in view of the fact that Democratic politics does not affect per pupil expenditures or teachers' salaries. The concentration of southern states among the most Democratic states accounts for these relationships; if the southern states are removed, the coefficients disappear. Rural midwestern Republican states, although they share many of the same economic characteristics of southern states, have fewer drop-outs and mental failures. Likewise the midwestern reliance on non-college teachers is probably not a product of Republican party affiliation.

The southern states stand high on drop-out rates and mental failures. This standing is not merely a product of their lower economic development levels, since southern states stand higher than non-southern states in these outcomes, even after controlling for economic

development. This suggests that some attribute of the southern states other than their economic development levels or Democratic politics accounts for these generally undesirable educational outcomes. We can only speculate on what attribute of the southern states is responsible for these educational failures. Certainly a plausible explanation is the system of segregated education in the southern states with its deprivation of educational and cultural opportunities for large numbers of children. Negroes are heavily overrepresented in drop-out rates and mental failures. It is probably not only segregated education that brings this about, but limitations on occupational and employment opportunities and general cultural deprivation.

It seems more plausible that Democratic politics might "bring about" increased federal and state support for education and decreased reliance upon local sources of educational revenue. Controlling for economic development actually increased the correlation between Democratic control and federal financial participation. Moreover, the removal of the southern states did not significantly affect the partial coefficients between Democratic politics and these particular outcomes. Differences between strong Democratic and strong Republican states in the degree of centralization in state educational administration must be related in some way to their differences in party affiliation. The midwestern and upper New England states, which in many ways resemble the South in economic resources, have resisted the consolidation of local school districts and have continued to place the heaviest financial burden of education on local rather than state governments. This suggests that in their policy adjustments to economic deprivation, strong Republican and strong Democratic states take separate courses. Strong Republican states in the Midwest and upper New England refuse to give up local control over education, while strong Democratic states of the South have consolidated school districts and have looked to the state and federal governments for financial support.

All we can really say on the basis of these operations, however, is that a linkage exists between the partisan character of state politics and several educational outcomes, and that this linkage does not depend upon economic development.

Party Competition

In the simple coefficients in Table 2, which do not control for the effects of economic development, party competition appears significantly related to many of the educational variables. States with a high degree of party competition tend to spend more money per pupil on their schools, pay higher teachers' salaries, attract more men teachers, and experience fewer drop-outs and mental failures. These same states have larger school districts and raise more school revenue from local than from state or federal sources. But since we already know that economic development affects both party competition and

educational policies, it is necessary to sort out the influence of party competition on educational policy from the influence of economic development. When the effects of economic development are discounted, party competition does not explain differences among the states in per pupil expenditures, educational effort, teachers' salaries, teacher preparation, male teachers, or pupil-teacher ratios. Party competition appeared independently related only to drop-out rates and mental failures, but this relationship is a product of the peculiar influence of southern states.

In short, while competitive and noncompetitive states differ somewhat in education policy, these differences can be traced to the effect of economic development rather than party competition.

Political Participation

The simple coefficients in Table 2 show that there is considerable association between voter turnout and educational outcomes. States with high levels of voter participation are the same states with generally higher per pupil and per capita educational expenditures, higher teachers' salaries, better-prepared secondary teachers, more male teachers, smaller pupil-teacher ratios, and fewer drop-outs and mental failures. They are also the same states with smaller school districts and greater reliance on local school revenue rather than state or federal school aid. However, since we know that these states are also the most wealthy, urban, industrial states with better-educated adult populations, we cannot attribute these educational outcomes to participation levels until we control for the effects of economic development.

When economic development is controlled, most of the association between voter participation and educational outcomes disappears. Voter participation has no independent effect upon education expenditures, average teachers' salaries, male teachers, pupil-teacher ratios, teacher preparation, the size of school districts, or the extent of state or federal participation in school finance.

Interestingly, the coefficients between participation and drop-out rates and mental failures remain significant even after controlling for economic development. This relationship does not depend upon the southern states. It may be that the relationship between participation and drop-out rates and mental failures is a feedback linkage. Participation may not effect educational outcomes; but education outcomes, particularly drop-outs and mental failures, may affect participation.

Malapportionment

Malapportionment of state legislatures has been successfully challenged before the Supreme Court on the grounds that it denies to citizens the equal protection of the laws. This was a normative challenge stemming from firmly entrenched values about political equality. The moral case for reapportionment cannot be tested empirically. However, proponents of reapportionment have occasionally made statements about the effect of malapportionment upon public policy and have predicted policy consequences of reapportionment. These statements can be tested empirically. In the field of education, it has been argued that malapportionment, with its overrepresentation of rural areas, leads to de-emphasis on education.

However, on the whole, the policy choices of malapportioned legislatures are not noticeably different from the policy choices of well-apportioned ones. None of the coefficients under the apportionment score is statistically significant. There is no evidence in educational policy decisions.

V. CONCLUSIONS-IMPLICATIONS: AN EVALUATION OF A MODEL

Let us begin an evaluation of our explanatory model by trying to summarize its powers of explanation. To what extent can differences in educational outcomes among the states be explained by reference to our model? Operationally speaking, the question becomes: How much of the total variation in educational outcomes can be attributed to all of the economic development variables and political system characteristics considered together?

Multiple correlation coefficients for key policy variables are shown in the left-hand column of Table 3. These coefficients summarize the total effect of four economic development measures and four political system variables on each policy outcome. In other words, these coefficients summarize the explanatory power of urbanization, industrialization, income, education, partisanship, party competition, voter participation, and malapportionment, considered together.

The summary coefficients presented in Table 3 show that our model possesses very substantial explanatory power. Of course, the question of what is or is not a satisfactory level of explanation is always a very subjective one. But it seems safe to conclude that our model has turned out to be a very powerful tool in policy analysis. A multiple coefficient of .71 or above indicates that more than half of the total variation among the states in a policy measure has been explained by our model. Most of our key policy measures are above that level of explanation, and others are quite close to it. This means that our model succeeds in explaining most of the variation among the 50 states in important policy outcomes in education.

TABLE 3
Comparison of Effect of Economical Development Variables and
Political-System Variables on Educational Outcomes in 50 States

	Total Effect Economic Development and Political System Variables	Total Effect Economic Development Variables	Total Effect Political System Variables	Effect of Economic Development Variables Controlling for Political System Variables	Effect of Political System Variables Controlling for Economic Development Variables
Per Pupil Expenditures	.86	.85	.58	.61	.04
Size of School Districts	.69	.52	.67	.05	.28
State Participation	.74	.49	.70	.13	.41
Federal Participation	.74	.50	.37	.48	.40
Average Teacher's Salary	.91	.90	.43	.78	.05
Elementary Teachers with B.A.	.85	.70	.64	.54	.47
Secondary Teachers with M.A.	.64	.60	.33	.34	.08
Male Teachers	.73	.70	.56	.32	.10
Pupil-Teacher Ratio	.80	.70	.74	.24	.30
Drop-Out Rate	.91	.82	.79	.54	.48
Mental Failures	.88	.79	.81	.32	.39

Comparing the Effects of Economic and Political Variables

One further set of operations seems appropriate in order to confirm the belief that the character of political systems is less important than economic development in shaping educational policy. We want to know how much variation in educational policy can be explained by all of the political system characteristics at once while controlling for all of the socio-economic variables at once. Then we want to compare this with the variation in educational policy which can be explained by all of the socio-economic variables at once while controlling for all of the political factors at once. The only way to do this is with multiple-partial correlation coefficients. These statistics permit us to compare the influence of all of our economic development variables with the influence of all political system characteristics.

In Table 3 the multiple-partial coefficients in the fourth column from the left show us the explanatory power of all of the economic development variables while controlling for all of the political system variables. The multiple partial coefficients in the fifth column show the explanatory power of all of the political system variables. By comparing the size of the coefficients in these two columns we can compare the effects of all economic development variables.

Again the evidence seems conclusive: economic development variables are more influential than political-system characteristics in shaping educational policy in the states. Multiple and multiple-partial correlation analysis presented in Table 3 confirms the results of simple and partial correlation analysis presented earlier. A majority of the policy variables listed are more closely related to economic variables than to political variables. These are the policy outcomes for which the coefficients in the fourth column are larger than the coefficients in the fifth column. For these outcomes the effects of all economic variables under controlled conditions are greater than the effects of all political variables under controlled conditions.

VI. SUMMARY

There is a very interesting parallel between these findings about the 50 states and the results of H. Thomas James' analysis of the determinants of educational spending in 107 cities.¹⁵ James found that socioeconomic variables in the cities--income, property value, adult education, race--were more important in educational spending than characteristics of school systems--whether the school board was appointed or elected dependent on or independent of city control. This parallels our findings about the primacy of economic variables over political system variables in shaping educational policy.

There are only four policy outcomes that appear to be more influenced by political variables than by economic variables. These are pupil-teacher ratios, drop-out rates, the size of school districts, and reliance upon state government for school revenue. Two of these variables--the size of school districts and state financial participation--have to do with centralization in education. Political conditions in the states may not "cause" or "bring about" these outcomes. But there is an association between political conditions in the states and these outcomes that is not merely a product of the intervening impact of economic development.

We are not really justified in concluding from this study that political variables do not have any impact on educational policy in that states. We can only say that partisanship, party competition, participation, and malapportionment do not appear to be as influential as economic development in determining most of the policy outcomes we have mentioned.

It may be that the measures employed are too crude to reveal the real impact of political variables on state activities. Perhaps the effect of politics on policy outcomes is too subtle to be revealed in quantitative analysis. Perhaps there are political variables other than partisanship, party competition, participation, and malapportionment that affect policy outcomes. For example, it may be that differences among state populations in political values and attachments can be shown to influence policy outcomes significantly, even after controlling for the effects of economic development. However, it was already pointed out that a great deal of literature in political science asserts that partisanship, party competition, voter participation, and malapportionment are influential political variables. Our findings at least warn educators and political scientists against making simple generalizations about the policy consequences of these political variables. Hopefully, our findings will also challenge educators and political scientists to continue research into the linkages between politics, economics, and educational policy.

NOTES AND REFERENCES

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4. Edward F. Renshaw, "A Note on the Expenditure Effect of Aid to Education," Journal of Political Economy, LXVII (April, 1960), 170-74.
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6. For the excellent summary of research on politics and educational decision-making at the local level, see Ralph B. Kimbrough, Political Power and Educational Decision-making (Chicago: Rand McNally Co., 1964).
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9. David Easton, The Political System (New York: Alfred A. Knopf, 1953); A Framework for Political Analysis (New York: Prentice-Hall, 1965); and A Systems Analysis of Political Life (New York: John Wiley & Sons, 1965.)
10. The following measures of these variables were employed: percentage of state population living in urban areas; one minus the percentage of the state work to be employed in agriculture, fisheries, and forestry; median family income in the state; and median school year completed by population age 25 and over in the state. All figures are from U.S. Bureau of the Census 1960 Census of Population, PCI-IC (Washington, D.C.: Government Printing Office, 1962).
11. National Education Association, National Policy and the Financing of Public Schools (Washington, D. C.: The Association, 1962), p. 1.

12. The specific measure of partisanship used in Table 2 is the percentage of total seats in the lower house of the state legislature held by Democrats from 1954 to 1964. Similar measures focusing on upper houses and governorships (not shown) produced results almost identical to those in Table 2. (Note that this measure of partisan success is expressed as Democratic percentage; simply reverse the findings to express the effect of Republican success.)
- The competition measure used in Table 2 was the proportion of seats in the lower house held by the majority party in each state from 1954 to 1964, regardless of whether the majority party was the Democratic or Republican Party. Similar measures focusing on the upper house and governorship produced almost identical results.
- The participation measure was the average percentage of eligible voters casting votes in gubernatorial elections between 1954 and 1964. The malapportionment measure was the Schubert and Press "apportionment score"; see Glenon Schubert and Charles Press, "Measuring Malapportionment," American Political Science Review, LVIII (June, 1964), 302-27, and corrections published December, 1964, pp. 968-70.
13. From U.S. Office of Education, Statistics of State School Systems, 1961-62 (Washington, D. C.: Government Printing Office, 1963); and National Education Association Rankings of the States, 1963 (Washington, D. C.: The Association, 1963).
14. Edward F. Renshaw, op. cit.
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